IN THE CLAIMS

A listing of all claims and their current status in accordance with 37 C.F.R. § 1.121(c) is provided below.

1. (previously presented) An oximeter sensor comprising:

a light emitter for directing light at a patient;

a light detector mounted to receive light from the patient; and

a memory storing a first formula for determining oxygen saturation, a second formula for determining oxygen saturation, a first set of coefficients corresponding to a wavelength of the light emitter for use in the first formula, and a second set of coefficients corresponding to the wavelength of the light emitter for use in the second formula, wherein the first formula differs from the second formula.

2. (previously presented) The oximeter sensor of claim 1 wherein the coefficients are dependent on a mean wavelength of the light emitter.

3. (previously presented) The oximeter sensor of claim 1 wherein the memory further stores a value indicating a signal breakpoint between the first and second formulas.

4. (previously presented) The oximeter sensor of claim 1 wherein at least one of the different formulas is a nonlinear formula.

5. (previously presented) The oximeter sensor of claim 1 wherein the different formulas are linear formulas.

6. (previously presented) An oximeter sensor system comprising:

a light emitter for directing light at a patient;

a light detector mounted to receive light from the patient; and

a memory, mounted in a sensor or between the sensor and an oximeter monitor, the memory storing an indication of a breakpoint, first and second sets of coefficients corresponding to a same wavelength of the light emitter, and first and second formulas for determining oxygen saturation, the oximeter monitor selecting between the first and second sets of coefficients and the first and second formulas for determining oxygen saturation based at least in part on the breakpoint.

7. (currently amended) The ~~oximeter sensor~~ system of claim 6 wherein the coefficients are dependent on a mean wavelength of the light emitter.

8. (canceled)

9. (currently amended) The ~~oximeter sensor~~ system of claim 6 wherein at least one of the formulas is a nonlinear formula.

10. (currently amended) The ~~oximeter sensor~~ system of claim 6 wherein the formulas are linear formulas.

11. (previously presented) An oximeter sensor comprising:

a light emitter for directing light at a patient;

a light detector mounted to receive light from the patient; and

a memory storing at least two different algorithms, and a plurality of alternate values of oxygen saturation or ratio-of-ratio values used in the at least two different algorithms to determine oxygen saturation, the plurality of values corresponding to the same mean wavelength of the same light emitter.

12. (currently amended) The sensor of claim 11 wherein the values ~~are~~ correspond to different coefficients or formulas used for different ranges of oxygen saturation.

13. (currently amended) **A[[n]]** pulse oximeter system comprising:

a pulse oximeter sensor comprising:

a light emitter for directing light at a patient;

a light detector mounted to receive light from the patient; and

a memory storing a first formula for determining oxygen saturation, a second formula for determining oxygen saturation, a first set of coefficients corresponding to a wavelength of the light emitter for use in the first formula, and a

second set of coefficients corresponding to the wavelength of the light emitter for use in [[aid]]the second formula, wherein the first formula differs from the second formula; and

a pulse oximeter monitor configured to receive communications from the pulse oximeter sensor and configured to perform calculations using one or both of the first and second formulas to estimate oxygen saturation in blood of the patient.

14. (currently amended) The ~~oximeter sensor~~ system of claim 13 wherein the coefficients are dependent on a mean wavelength of the light emitter.

15. (currently amended) The ~~oximeter sensor~~ system of claim 13 wherein the memory further stores a value indicating a signal breakpoint between the first and second formulas.

16. (currently amended) The ~~oximeter sensor~~ system of claim 13 wherein at least one of the different formulas is a nonlinear formula.

17. (currently amended) The ~~oximeter sensor~~ system of claim 13 wherein the different formulas are linear formulas.

18. (new) The oximeter sensor of claim 1 wherein at least one of the formulas comprises a spline function.

19. (new) The oximeter sensor of claim 1 wherein at least one of the formulas comprises a ratio-of-ratios function.

20. (new) The oximeter sensor of claim 3 wherein the value comprises an indication of oxygen saturation.

21. (new) The system of claim 6 wherein at least one of the formulas comprises a spline function.

22. (new) The system of claim 6 wherein at least one of the formulas comprises a ratio-of-ratios function.

23. (new) The system of claim 6 wherein the breakpoint comprises an oxygen saturation value.

24. (new) The system of claim 13 wherein at least one of the formulas comprises a spline function.

25. (new) The system of claim 13 wherein at least one of the formulas comprises a ratio-of-ratios function.

26. (new) The system of claim 15 wherein the value comprises an oxygen saturation level.

27. (new) An oximeter system comprising:

an oximeter sensor, comprising:

a light emitter configured to direct light at a patient;

a light detector mounted to receive light from the patient; and

a sensor memory storing a first set of coefficients corresponding to a wavelength of the light emitter and a second set of coefficients corresponding to the wavelength of the light emitter;

an oximeter monitor, comprising:

a monitor memory storing a first formula and a second formula, wherein the first formula differs from the second formula; and

a calculation mechanism configured to determine a blood oxygen saturation in the patient, wherein the calculation mechanism selects and utilizes the first set of coefficients in the first formula for a first range of oxygen saturation values and selects and utilizes the second set of coefficients in the second formula for a second range of oxygen saturation values, wherein the first range differs from the second range.

28. (new) The system of claim 27 wherein the coefficients are dependent on a mean wavelength of the light emitter.

29. (new) The system of claim 27 wherein at least one of the different formulas is a nonlinear formula.

30. (new) The system of claim 27 wherein the different formulas are linear formulas.

31. (new) The system of claim 27 wherein at least one of the different formulas comprises a spline function.

32. (new) The system of claim 27 wherein at least one of the different formulas comprises a ratio-of-ratios function.

33. (new) The system of claim 27 wherein the oximeter memory further stores a value indicating a signal breakpoint between the first and second formulas.

34. (new) The system of claim 33 wherein the value comprises an oxygen saturation level.

35. (new) An oximeter system comprising:

an oximeter sensor, comprising:

a light emitter configured to direct light at a patient;

a light detector mounted to receive light from the patient; and

a memory storing a first set and a second set of a plurality of alternate values of oxygen saturation or ratio-of-ratio values, wherein the plurality of values correspond to a same mean wavelength of the light emitter;

an oximeter monitor, comprising:

an oximeter memory storing a spline-fitting algorithm used to determine oxygen saturation; and

a calculation mechanism configured to determine a blood oxygen saturation level in the patient, wherein the calculation mechanism uses the algorithm to define a first curve using the first set of a plurality of alternate values and uses the algorithm to define a second curve using the second set of a plurality of alternate values, wherein the first curve corresponds to a first range of oxygen saturation values and the second curve corresponds to a second range of oxygen saturation values, wherein the first range differs from the second range.

36. (new) A method of manufacturing an oximeter monitor, comprising:

providing a drive circuit configured to provide signals to an oximeter sensor that is coupleable to a patient;

providing a read circuit configured to read from a sensor memory a first set of coefficients for use in a first formula and a second set of coefficients for use in a second formula, wherein the read circuit is configured to provide the first and second sets of coefficients to a calculation circuit in the monitor; and

providing the calculation circuit in the monitor, wherein the calculation circuit is configured to determine a blood oxygen saturation in the patient by utilizing the first set of coefficients in the first formula for a first range of oxygen saturation and utilizing the second set

of coefficients in the second formula for a second range of oxygen saturation, wherein the first range differs from the second range.

37. (new) The method of claim 36, comprising storing a value indicating a signal breakpoint between the first and second formulas.

38. (new) The method of claim 36, comprising storing the first and second formulas in a memory of the oximeter monitor.

39. (new) The method of claim 36, comprising providing the calculation circuit with an algorithm to read a breakpoint signal, wherein the breakpoint signal determines whether the calculation circuit uses the first formula or the second formula to calculate the blood oxygen saturation.

40. (new) The method of claim 39 wherein the calculation circuit is configured to read the breakpoint signal from the sensor memory.

41. (new) The method of claim 39 wherein the calculation circuit is configured to read the breakpoint signal from a memory of the oximeter monitor.

42. (new) The method of claim 39 wherein the breakpoint signal is based on an indication of oxygen saturation.

43. (new) A method of manufacturing an oximeter monitor, comprising:

providing a drive circuit configured to provide signals to an oximeter sensor;

providing a read circuit configured to read from a memory of the oximeter sensor a first set of coefficients for use in at least one formula, a second set of coefficients for use in the same formula, and a breakpoint signal, wherein the breakpoint signal is based on an indication of oxygen saturation; and

configuring the monitor to perform calculations using the at least one formula to estimate oxygen saturation in the blood of the patient, wherein the monitor is configured to use the breakpoint signal to determine whether the first set of coefficients or the second set of coefficients is used in the at least one formula.

44. (new) A method of manufacturing an oximeter monitor, comprising:

providing a drive circuit configured to provide signals to an oximeter sensor;

providing a memory containing a first formula and a second formula, wherein the first formula differs from the second formula;

providing a read circuit configured to request a first set of coefficients for use in the first formula, a second set of coefficients for use in the second formula, and a value indicating a signal breakpoint between the first and second formulas;

providing a calculation mechanism configured to determine a blood oxygen saturation; wherein the calculation mechanism selects and utilizes the first set of coefficients in the first formula and selects and utilizes the second set of coefficients in the second formula.

45. (new) The method of claim 44 wherein the breakpoint signal is based on an indication of oxygen saturation.

46. (new) An oximeter system comprising:

an oximeter sensor, comprising:

a light emitter configured to direct light at a patient;

a light detector mounted to receive light from the patient; and

a sensor memory storing a first formula for determining oxygen saturation, a second formula for determining oxygen saturation, a first set of coefficients corresponding to a wavelength of the light emitter, and a second set of coefficients corresponding to the wavelength of the light emitter;

an oximeter monitor, comprising:

a calculation mechanism configured to determine a blood oxygen saturation in the patient, wherein the calculation mechanism selects and utilizes the first set of coefficients in the first formula for a first range of oxygen saturation values and selects and utilizes the second set of coefficients in the second formula for a second range of oxygen saturation values, wherein the first range differs from the second range.

47. (new) The system of claim 46 wherein the coefficients are dependent on a mean wavelength of the light emitter.

48. (new) The system of claim 46 wherein at least one of the different formulas is a nonlinear formula.

49. (new) The system of claim 46 wherein the different formulas are linear formulas.

50. (new) The system of claim 46 wherein at least one of the different formulas comprises a spline function.

51. (new) The system of claim 46 wherein at least one of the different formulas comprises a ratio-of-ratios function.

52. (new) The system of claim 46 wherein the sensor memory further stores a value indicating a signal breakpoint between the first and second formulas.

53. (new) The system of claim 52 wherein the value comprises an oxygen saturation level.